

REMARKS/ARGUMENTS

In response to the Office Action mailed May 16, 2007, Applicants amend their application and request reconsideration. In this Amendment examined claims 1-3 are cancelled. New claims 15-17 are added. Claims 7-14 are withdrawn from examination. Accordingly, claims 4-6 and 15-17 are now pending and under examination.

In view of the cancellation of claims 1-3, the title of the invention is again amended.

The commentary appearing at pages 2 and 3 of the Office Action has been considered. It is not understood what point is being made in this commentary. There are no omitted structural relationships in claims 4-6 with respect to the claimed wet etching apparatus. The apparatus includes a stage that holds and rotates a substrate, first and second radiating units that produce ultraviolet light of different wavelength ranges. That ultraviolet light irradiates a film that is on the substrate held by the stage. Further, a coating unit supplies a chemical solution to the substrate held on the stage. The interrelationship of these elements is made clear from the description of their operation. The discussion in the Official Action concerning a "multi-chamber unit" is imaginative, but has no relationship to what is described in the patent application or what appears in the claims that were examined. The assertion that there is no antecedent basis for the term "the film" in claims 2 and 3 is moot in view of the cancellation of those claims. However, the film was referred to in the second line of claim 1, providing clear antecedent basis for the reference in claims 2 and 3.

Express withdrawal of the commentary in the next communication is respectfully requested.

A significant number of provisional double patenting rejections were made with respect to the examined six claims. All of those double patenting rejections

relied either upon U.S. Patent Application 10/765,272 to Kume, examined by the present Examiner, or 10/441,061 to Otake.

A fundamental prerequisite for any double patenting rejection relying upon a co-pending patent application is the existence of a co-pending patent application. As to Kume, the patent application became abandoned August 1, 2006 due to the absence of a response to an outstanding Office Action. The Examiner herself mailed the Notice of Abandonment early in August of 2006. The Otake patent application became abandoned in January of 2006 due to a failure to respond to an Office Action mailed in July of 2005. Accordingly, Kume was declared abandoned some nine months before the filing of the present patent application and Otake was declared abandoned some three to four months prior to the mailing of the present Office Action. Clearly, all of the double patenting rejections were improvidently made and none needs any response. Those rejections must be withdrawn.

In the foregoing Amendment, claim 4 is amended consistent with the description of Figures 1 and 2 of the patent application at pages 5-7 of the patent application. The interaction of the parts of the apparatus are described in terms of a particular utility, namely, the treatment of the coating on a substrate of a high dielectric constant film. The film is made hydrophilic in a first step involving the first ultraviolet radiating units. Thereafter, a coating including an etchant is supplied and, through the use of the second ultraviolet radiating units, the wet etching by the etchant is enhanced.

Claim 5 is amended to avoid an unreasonable interpretation of the word "ambient" as including a liquid. Claim 5 originally made reference to an atmosphere, a word that was clarified in the Preliminary Amendment and turned against the Applicants in the Office Action. The point is that the gaseous ambient between the lamp house and the substrate being treated contains oxygen, which is known to attenuate ultraviolet light of certain wavelengths. See, for example, the first two paragraphs at page 6 of the patent application. The commentary with respect to claim

5 in the Office Action is not reasonable. Claim 6 is amended to be consistent with amended claim 4.

New claims 15-17 describe in somewhat different terms the wet etching apparatus just as that apparatus is described in the patent application at pages 5-7.

Claims 4-6 were rejected as anticipated by Matsuno et al. (JP 2002-316041, hereinafter Matsuno). This rejection is respectfully traversed.

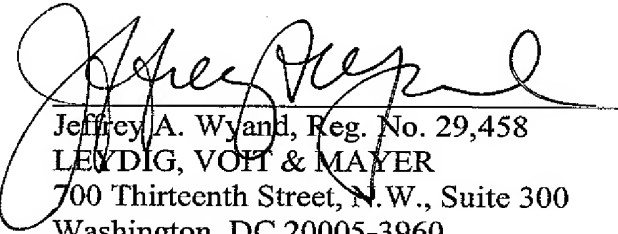
Giving careful attention to Matsuno, it is apparent that that publication does not disclose a wet etching apparatus for etching a high-k dielectric film. Moreover, Matsuno does not disclose that the described apparatus includes ultraviolet radiating units for breaking bonds or molecules of a high-dielectric film. Therefore, Matsuno cannot anticipate any of claims 4-6. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 4-6 were also rejected as unpatentable over Hirae et al. (Published U.S. Patent Application 2001/0001392, hereinafter Hirae) in view of Hiramoto et al. (U.S. Patent 5,510,158, hereinafter Hiramoto). This rejection is respectfully traversed.

As in the rejection based upon Matsuno, Hirae does not describe a wet etching apparatus etching a high-k dielectric film nor that the second ultraviolet radiating units provide light for breaking bonds of molecules of the high-k dielectric film. Further, this feature is not described in Hiramoto so that the combination of Hirae and Hiramoto cannot include all of the limitations of claim 4. Accordingly, the combination cannot establish *prima facie* obviousness as to any of claims 4-6. Reconsideration and withdrawal of the rejections of claims 4-6 are respectfully requested.

In addition, favorable consideration of new claims 15-17 is earnestly solicited.

Respectfully submitted,



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